**Papers on Covid and MS**

13 April 2022

* Salle, V.

**Coronavirus-induced autoimmunity**

Clin Immunol 2021;226:108694.

Read online - <https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/33610741/>

**Abstract**

The pandemic of Coronavirus disease 2019 (COVID-19), caused by a new severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has spotlighted the link between viral infection and autoimmunity. In this review, we focus on coronavirus-induced autoimmunity based on evidence from experimental animal models, SARS-CoV infection with in vitro studies of molecular mimicry and COVID-19 with several clinical reports of autoimmune manifestations of this disease. Further studies will be needed to better characterize the role of SARS-CoV-2 in the development of autoimmunity.

* Wouk J, et al.

**Viral infections and their relationship to neurological disorders**

Arch Virol 2021;166(3):733-753.

Read online - <https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/33502593/>

## Abstract

The chronic dysfunction of neuronal cells, both central and peripheral, a characteristic of neurological disorders, may be caused by irreversible damage and cell death. In 2016, more than 276 million cases of neurological disorders were reported worldwide. Moreover, neurological disorders are the second leading cause of death. Generally, the etiology of neurological diseases is not fully understood. Recent studies have related the onset of neurological disorders to viral infections, which may cause neurological symptoms or lead to immune responses that trigger these pathological signs. Currently, this relationship is mostly based on epidemiological data on infections and seroprevalence of patients who present with neurological disorders. The number of studies aiming to elucidate the mechanism of action by which viral infections may directly or indirectly contribute to the development of neurological disorders has been increasing over the years but these studies are still scarce. Comprehending the pathogenesis of these diseases and exploring novel theories may favor the development of new strategies for diagnosis and therapy in the future. Therefore, the objective of the present study was to review the main pieces of evidence for the relationship between viral infection and neurological disorders such as Alzheimer's disease, Parkinson's disease, Guillain-Barré syndrome, multiple sclerosis, and epilepsy. Viruses belonging to the families Herpesviridae, Orthomyxoviridae, Flaviviridae, and Retroviridae have been reported to be involved in one or more of these conditions. Also, neurological symptoms and the future impact of infection with SARS-CoV-2, a member of the family Coronaviridae that is responsible for the COVID-19 pandemic that started in late 2019, are reported and discussed.

* Mansoor SR, Ghasemi-Kasman M.

# Impact of disease-modifying drugs on the severity of COVID-19 infection in multiple sclerosis patients

J Med Virol 2021;93(3):1314-1319.

Read online - <https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/33044760/>

## Abstract

Recent evidence suggested that neurological manifestations occur in patients with a severe form of coronavirus disease (COVID-19). On the basis of this issue, neurologists are very concerned about patients with neurological disorders, especially multiple sclerosis (MS), as consumers of immunosuppressive or immune-modulating drugs. Therefore, the administration of proper disease-modifying therapies (DMTs) in MS patients is critical during the pandemic status. On the one hand, both the autoimmune diseases and immunosuppressive drugs increase the risk of infection due to impairment in the immune system, and on the other hand, postponing of MS treatment has serious consequences on the central nervous system. In the present study, we discussed recent literature about the effect of DMTs administration on the severity of COVID-19 in the MS patients. Overall, it seems that DMTs do not provoke the COVID-19 infection in the MS patients by declining immune responses and cytokine storm. However, as a precaution, the supervision of a neurologist is highly recommended.

* Fuchs V, et al.

# Presence of SARS-CoV-2 Transcripts in the Choroid Plexus of MS and Non-MS Patients With COVID-19

Neurol Neuroimmunol Neuroinflamm 2021; 8(2): e957.

Read online - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7862096/>

Although primarily targeting the respiratory system, coronavirus disease 2019 (COVID-19) affects the CNS in up to 80% of patients.[1](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7862096/#R1) Yet, findings on COVID-19 neuropathology have been conflicting: autopsy reports range from inflammatory CNS syndromes, cerebrovascular events, and endothelial damages to no COVID-19-specific brain pathologies. Little is known about the clinical course of neurologic autoimmune diseases and concurrent severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infection. Limited evidence suggests no difference in the incidence of hospitalization in patients with COVID-19 with autoimmune diseases as compared to the general population. Therefore, further in-depth pathologic investigations of patients with COVID-19 with autoimmune comorbidities are needed.